

ERIE CITY IRON WORKS

ERIE, PA.

Boilers, Furnaces and Pulverized Fuel Equipment

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PLAINTIFF'S EXHIBIT

ZUR-75

PRODUCTS:

BOILERS, FURNACES, PULVERIZERS:

Vertical, Horizontal, Cross Drum and Inclined Water Tube Boilers; Erie City "Economic" Self-contained Boilers; Erie City Steel Welded Heating Boilers; Horizontal and Vertical Fire Tube Boilers.

Erie City Seymour, Seymour "Carbofrax" (registered trade-mark of the Carborundum Company for the silicon carbide refractory manufactured by them), and Vortex Furnaces.

Erie City Unitype Pulverizers.

Erie City Powdered Coal Burners.

Also Lentz Poppet Valve and High Speed Engines, Fabricated Steel Plate and Pressure Vessels, Gray Iron and Semisteel Castings.

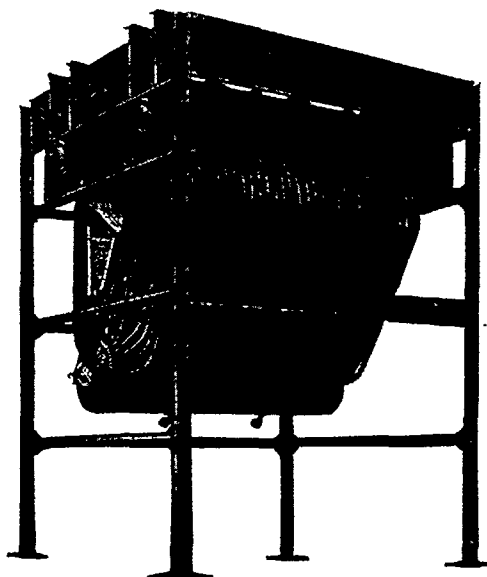
ENGINEERING SERVICE:

We maintain a highly technical staff of engineers whose services are available to those interested either in remodeling an old plant or building a new one. Their service includes the design and manufacture of boilers, furnace and firing equipment, as well as the design and installation of the complete power plant, even extending, if desired, to the accessories and brickwork.

ERIE CITY 3-DRUM BOILER:

It consists of three 48-in. drums. Each drum is rolled from a single plate and they are connected by banks of $3\frac{1}{4}$ -in. seamless steel tubes so arranged as to obtain the greatest freedom of circulation. Curved to a radius that will permit easy cleaning.

The boiler is suspended from an independent steel frame free to expand. The corner beams serve as binders for the brickwork.

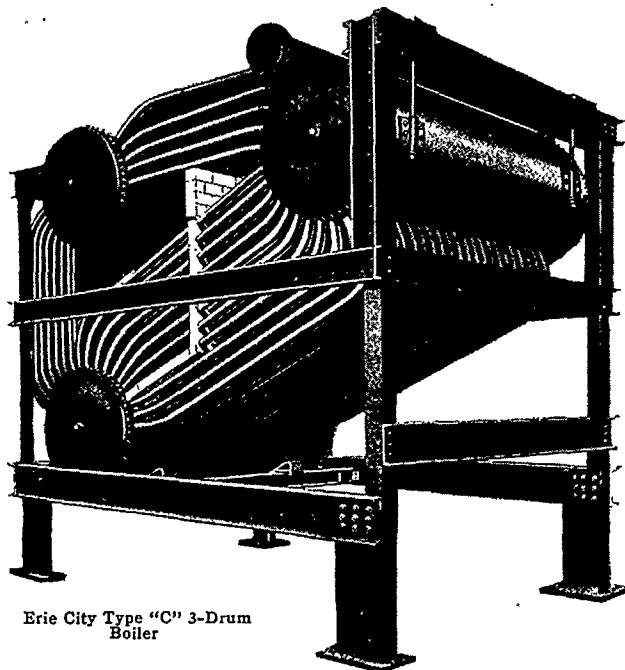


Erie City Type "A" 3-Drum Boiler

Operation: Raw water is fed into the top rear drum and moves upward in the front banks of tubes when heated, setting up a ring flow circulation. Saturated steam forming in the top front drum passes through two rows of crossover tubes into the top rear drum where it makes a rapid reverse turn, throwing off water and passing into a row of superheating tubes to the steam chamber, being further dried before passing into the steam line. Rapid circulation, quick response to load demands, and ability to produce absolutely dry steam are the outstanding features of the Erie City 3-Drum Boiler.

Sizes: There are hundreds of standard combinations of tube lengths and drum lengths available. Tube lengths of 15 to 27 ft. and drum lengths for 10 to 43 tubes across provide a wide range of single unit sizes from 195 to 1605 hp. Also furnished in twin setting for larger sizes. Built in all commercial pressures.

Send for Bulletin SB-2.



Erie City Type "C" 3-Drum Boiler

ERIE CITY TYPE "C" 3-DRUM BOILER:

An adaptation of the Erie City 3-drum boiler described above, the Type C series, is especially designed for the smaller steam user. It is available in sizes from 80 H. P. up to 600 H. P. for pressures up to 350 lbs. and for operation over a wide range of ratings.

It features the lowest headroom, the production of better than commercially dry steam, low maintenance cost and many other unique advantages.

Can be shipped completely built up in sizes up to 18 tubes wide. Send for Bulletin SB-15.

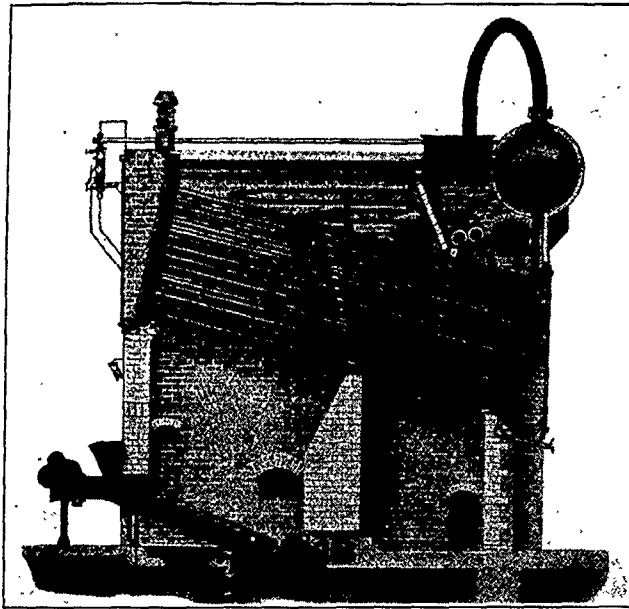
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ERIE CITY CROSS DRUM BOILER:

Desiring to make the cross drum an outstanding value for the box header—straight tube boiler user, we have made certain improvements.

With the outward bend of the tube sheet it is pos-



sible to drive all rivets hydraulically, thus assuring a tighter and stronger joint than is possible by any other method (see illustration below).

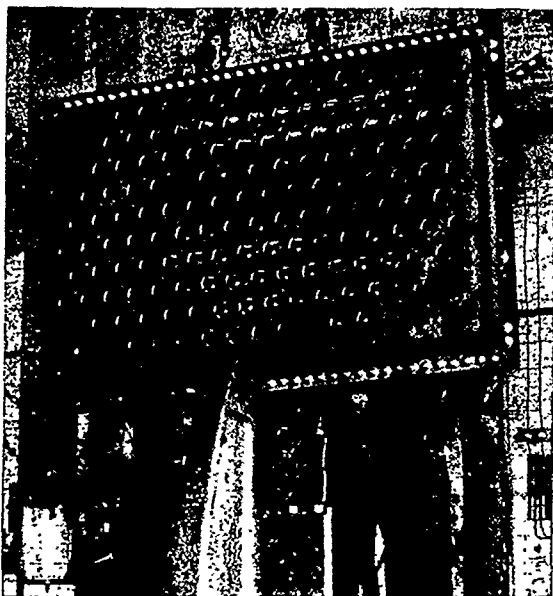
This construction has eliminated one calking edge.

The single row of rivets in the header is out of the fire.

The method of suspending the front header from the extended handhole sheet further eliminates possibility of leakage—all rivets in the hanger are out of the fire and water steam spaces.

Sizes: Built in drum sizes of 42, 48 and 54 in. in a wide range of sizes to meet low headroom conditions.

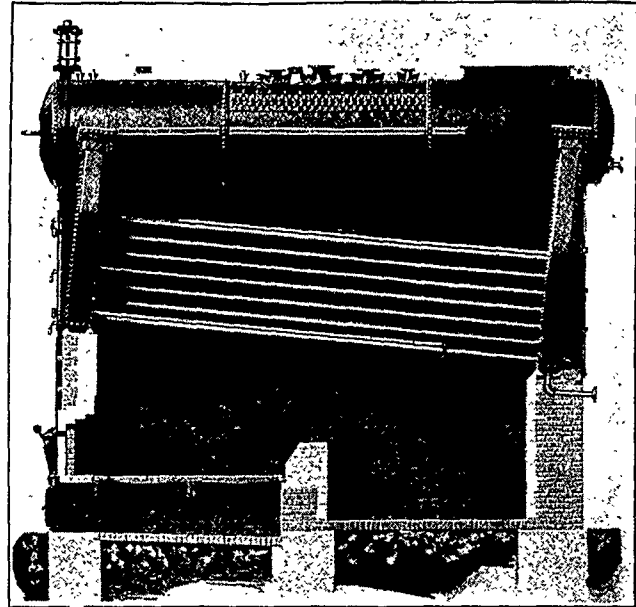
Write for Bulletin SB-13.



Construction of Box Header of New Cross Drum Boiler

ERIE CITY HORIZONTAL LONG DRUM BOILER:

It consists of two box headers connected by 4-in. seamless steel tubes which are staggered and set at a fixed angle to assist circulation. These headers or waterlegs are riveted to a horizontal long drum which



is fitted with deflector plate and removable sediment collecting pan.

Characteristics of boiler are:

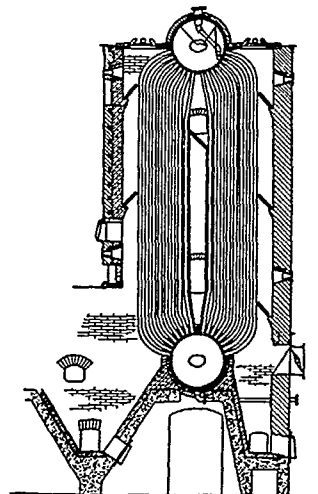
- (1) Larger water and steam capacity per horsepower than almost any water tube boiler.
- (2) Steady steamer, therefore easy to fire.
- (3) Straight tube.
- (4) Adaptable to any firing method.
- (5) Easy to clean and repair.

THE ERIE CITY 2-DRUM WASTE HEAT BOILER:

This boiler is an ideal waste heat boiler. Numerous installations have been made in steel, gypsum, cement and paper mills.

The installation shown here was made in a large gypsum mill. It is a 450 hp. boiler designed for 200 lb. working pressure. Note the absence of hidden pockets—every part of the boiler is accessible for cleaning.

Many special applications have been made to meet unusual conditions with and without integral economizers.



(Continued on next page)

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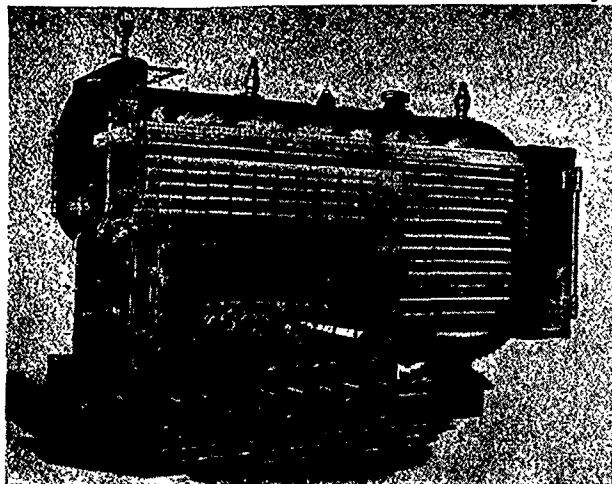
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(Continued from preceding page)

ERIE CITY "ECONOMIC" BOILER:

The Economic combines boiler, furnace lining and furnace in one unit. It has the quality of a well set stationary boiler with the added feature of being easily moved when occasion demands. It is adaptable to every firing method.

A few improvements recently made: All-steel construction; bridge wall included; greater adaptability; 200 hp. size added; steel base if desired; more water and steam capacity.



DIMENSIONS OF 100-LB. ECONOMIC BOILER.

No.	Hp.	Grate Area, Sq. Ft.	Heat Surface, Sq. Ft.	Length	Width	Height	Total Weight, Approx., Lb.
120	20	8.9	203	11' 6"	4' 3"	5' 9"	11,225
121	30	12	300	12' 0"	4' 9"	6' 0"	13,750
122	40	15	400	13' 0"	5' 0"	6' 6"	16,325
123	50	16.7	501	12' 6"	5' 6"	7' 0"	19,050
124	60	18.5	603	14' 3"	5' 6"	7' 0"	21,150
125	80	22.5	813	14' 3"	6' 3"	8' 9"	27,400
126	100	27	999	16' 6"	6' 3"	8' 9"	31,000
127	125	30	1250	16' 9"	6' 9"	9' 0"	35,600
128	150	32.5	1485	19' 0"	6' 9"	9' 0"	39,700
130	200	41.2	2002	19' 6"	7' 3"	10' 0"	49,950

Built also for 125 and 150 lbs. working pressure.

All sizes can be shipped complete ready to set up.

Standard fittings include water column and piping, steam gauge and gauge cocks, feed and check valves, pop safety valves, stack and guy wire, stationary grates and bearers.

Send for Booklet SB-4.

ERIE CITY WELDED HEATING BOILER:

This is an electric-welded boiler built in three types:

- (1) Smokeless for coal—with refractory covered curtain and bridge wall.
- (2) Up-draft—without refractory curtain.
- (3) Oil, gas, or stoker fired—especially designed to meet the requirements of these firing methods. Large furnace volume is provided.

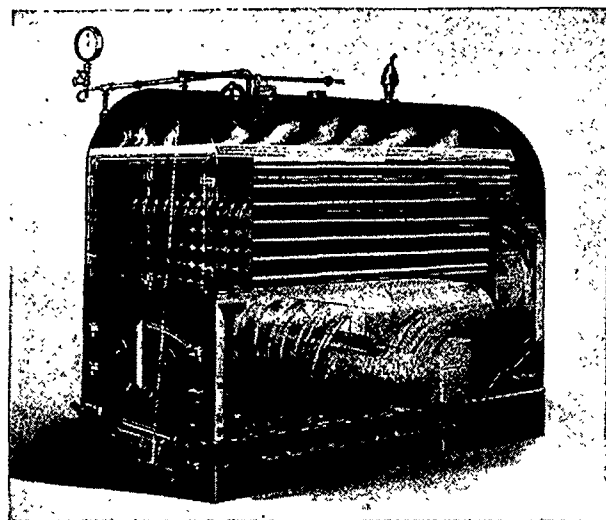
Each of these types is built in a wide range of sizes. They are shipped complete ready for installation.

Characteristics: Characteristics of the Erie City Steel Heating Boiler are:

- Large grate area and firebox.
- Correctly proportioned gas passages.
- Low draft loss.

The ratio of heating surface to grate area is above the average for boilers of this type.

The ratio of radiant heating surface to convection heating surface is also well above the average in this boiler. Send for Bulletin SB-12.



SERIES NO. 3—SMOKELESS FOR COAL

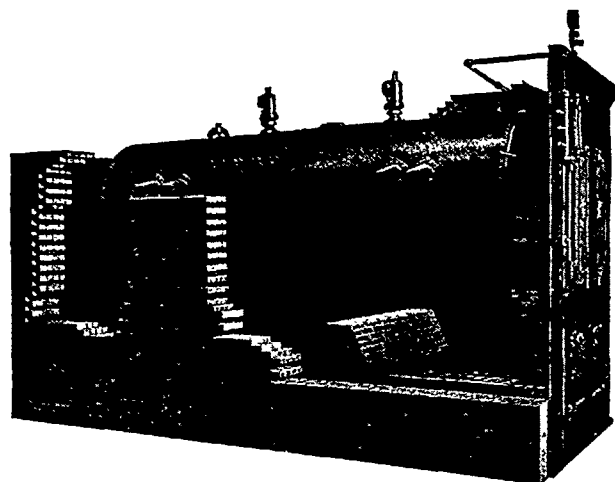
No.	Heating Surface, Sq. Ft.	Grate Area, Sq. Ft.	Capacity, Sq. Ft.		Shipping Weight, Lb.
			Steam	Hot Water	
352	259	13.1	3600	5800	6500
353	301	13.1	4200	6700	7000
354	343	14.6	4800	7600	7500
355	375	16.3	5200	8400	8000
356	409	17.9	5700	9100	8500
357	449	17.9	6200	10000	9000
358	523	19.7	7300	11700	9800
359	600	22	8400	13400	10800
360	680	22	9500	15200	11750
361	803	24	11100	17800	13300
362	914	27	12700	20400	14650
363	1071	29.3	14900	23900	16500
364	1222	31.5	17100	27300	18500
365	1372	31.5	18100	29000	20500
366	1533	34.1	21000	33600	22400
367	1686	35.5	22600	36200	24300
368	1927	38.5	26400	42200	27250
369	2153	41.5	30100	48200	30000

ERIE CITY HORIZONTAL RETURN TUBULAR BOILER:

Erie City Stationary Boiler is made and stocked in a wide range of sizes from 25 to 250 hp.

It is a thoroughly standardized boiler backed by years of dependable service under every conceivable application in all parts of the world. We have, therefore, a wealth of experience in adapting this boiler to meet varied steam requirements.

Properly set a horizontal return tubular boiler is unbeatable, within its range, for economical steam generation. It is being successfully fired by Erie City pulverized coal equipment at ratings of 200% and more. Send for Bulletin SB-5.



ERIE CITY IRON WORKS

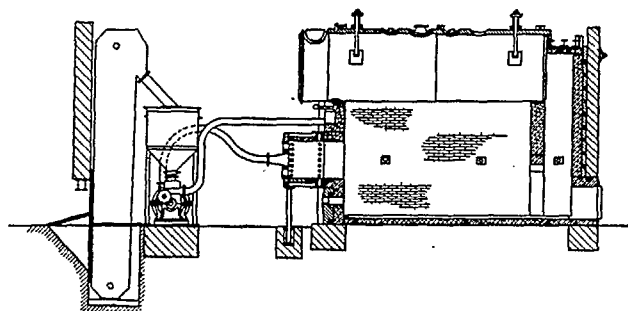
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PULVERIZED COAL EQUIPMENT:

For Horizontal Return Tubular Boilers of 100 to 300 Hp.:

The Vortex Furnace was designed to make possible the application of pulverized coal to the small boiler plant with its usual demand for a wide range of rating. It consists of a cylindrical, refractory lined, air-cooled furnace extension (see drawing) in which the primary ignition takes place, presenting an incandescent surface to the incoming fuel stream. Easy lighting and rapid arrival at normal combustion conditions are assured.

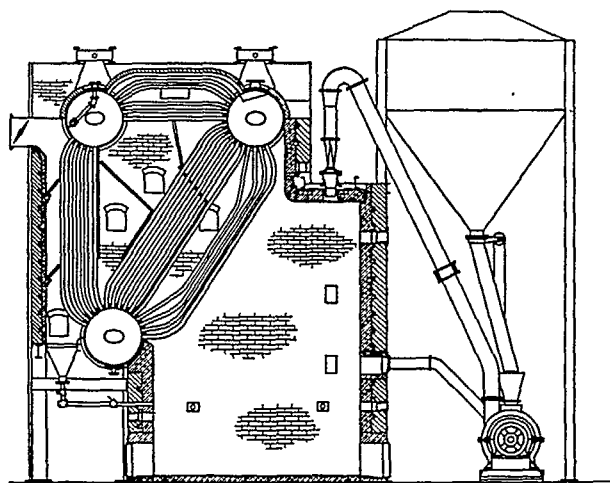
Write for a descriptive booklet *SB-6A*.

**With Water Tube Boilers—Moderate Ratings:**

Erie City Pulverized Coal Equipment has been widely used with water tube boilers operating at moderate ratings. Solid or air-cooled furnaces are giving excellent service under these loads.

We recently made an investigation of our pulverized coal installations to determine the furnace maintenance cost of solid wall construction and found this item to be negligible even with plants operating five years.

Typical of present-day practice is the installation shown below, which is one of several, made for a large food manufacturer. It consists of a 407 hp. Erie City



3-Drum Boiler and Erie City Size "C" Unitype Pulverizer. The unit is designed to operate up to 250% rating. Solid walls are used. Preheated air is bled from the furnace and passed through the Unitype to dry coal of high moisture content as it is fed into the pulverizer chamber.

SEYMOUR FURNACE:

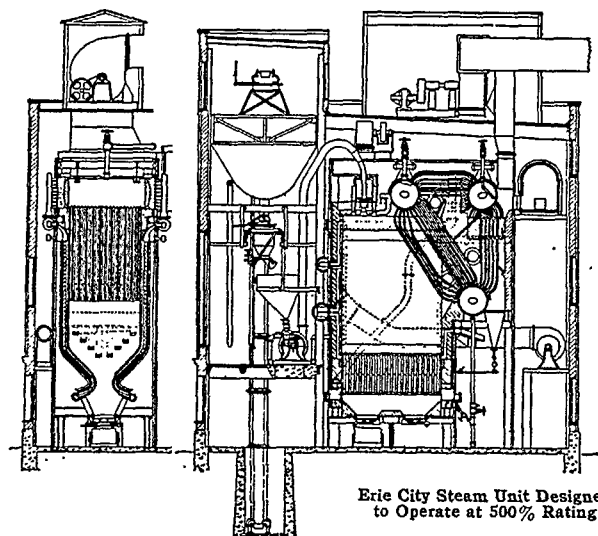
Erie City Seymour water-cooled, refractory lined furnace is adapted to stoker fired furnace walls and especially to boiler furnaces for pulverized coal firing. The cooling tubes, connected to the boiler circulation,

are encased in refractory material, their life being thus greatly increased and an incandescent surface being presented to the fuel stream.

It is particularly notable for wide fluctuations in rating, simplicity of construction, long life and low upkeep.

SEYMOUR "CARBOFRAX" FURNACE:

A special application of the Seymour design is its use with "Carbofrax" (registered trade-mark of the Carborundum Company for the silicon carbide refractory manufactured by them) refractory surface. This combination has proved outstandingly successful. Full details on request.



Erie City Steam Unit Designed to Operate at 500% Rating

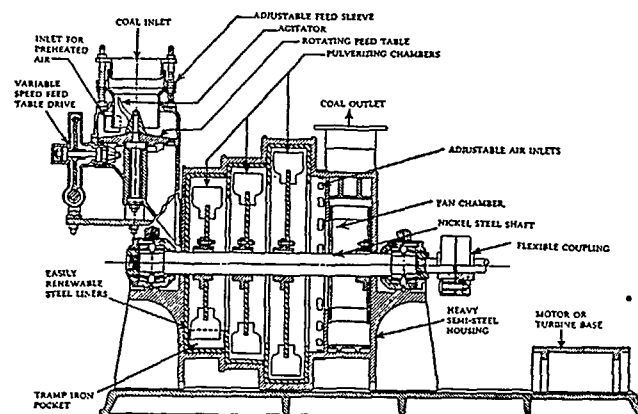
ERIE CITY UNITYPE PULVERIZER:

The Erie City Unitype Pulverizer is of the impact type. It successfully handles lignites, sub-bituminous, high and low ash bituminous, oil still coke and coal machine cuttings.

Furnished for motor, turbine, rope, belt or chain drive.

Being entirely self-contained, no auxiliary fans, separators, collectors or dryers are required. Feed mechanism designed to insure easily controllable, continuous flow of coal and responds quickly to changes in boiler or furnace requirements.

Stock machines are carried in capacities up to 7500 lb. per hour and are in successful operation with boilers ranging from 100 to 1400 hp.



Sectional View of Erie City Unitype Pulverizer

Mechanical Catalog

Consisting of uniformly presented and illustrated catalog
information, conveniently classified, describing the
products of manufacturers of mechanical equipment

with

DIRECTORY OF MANUFACTURERS
OF INDUSTRIAL EQUIPMENT,
MATERIALS AND SUPPLIES

A specialized, classified and cross-indexed list
with names and addresses inserted free of charge

1930-31

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